CLAIMS

What is claimed is:

1. A method comprising:

receiving a signal strength indicator that indicates a power level of a coupled signal from a local wireless transmitter at a local wireless receiver; and

tuning an active cancellation circuit to reduce the signal strength indicator, said active cancellation circuit to generate a cancellation signal to combine with the coupled signal at the local wireless receiver.

2. The method of claim 1 wherein the local wireless receiver and at least one of the local wireless transmitter and at least one additional local wireless transmitter operate in a same frequency band.

3. The method of claim 1 wherein tuning the active cancellation signal comprises:

measuring a first level of the signal strength indicator;

adjusting an active cancellation control signal in a first direction;

measuring a second level of the signal strength indicator;

further adjusting the active cancellation control signal in the first direction if the second level is lower than the first level; and

adjusting the active cancellation control signal in an opposite direction if the second level is higher than the first level.

4. The method of claim 3 wherein tuning the active cancellation signal further comprises:

iteratively measuring the signal strength indicator and either further adjusting the active cancellation control signal or adjusting the active cancellation control signal in the opposite direction depending on a comparison of a current measurement of the signal strength indicator and a previous measurement of the signal strength indicator.

5. The method of claim 4 wherein the active cancellation control signal locks after adjustment of the active cancellation control signal has switched directions at least twice.

6. The method of claim 4 wherein the active cancellation control signal comprises a first dimension control signal, and wherein tuning the active cancellation signal further comprises:

iteratively measuring the signal strength indicator and either adjusting a second dimension control signal in the first direction or adjusting the second dimension control signal in the opposite direction depending on a comparison of a current measurement of the signal strength indicator and a previous measurement of the signal strength indicator.

7. The method of claim 6 wherein the method further comprises:

switching from tuning the first dimension control signal to tuning the second dimension control signal when the first dimension control signal locks; and

switching from tuning the second dimension control signal to tuning the first dimension control signal when the second dimension control signal locks.

8. The method of claim 4 wherein the active cancellation control signal is initially adjusted by a first step size and adjusted by a smaller step size once the active cancellation control signal has locked at least once.

9. The method of claim 4 wherein the signal strength indicator is initially measured over a first integration time and measured over a longer integration time once the active cancellation control signal has locked at least once.

10. The method of claim 1 wherein tuning the active cancellation circuit is based on at least one of a plurality of tuning steps sizes and a plurality of integration times.

11. The method of claim 1 wherein, when tuned, the cancellation signal is to reduce a second coupled signal at the local wireless receiver, said second coupled signal being from at least one additional local wireless transmitter.

12. The method of claim 1 wherein the active cancellation circuit is tuned to a center frequency of the local wireless receiver.

13. The method of claim 1 further comprising:

enabling tuning only when the local wireless transmitter is an only local wireless transmitter that is transmitting and when the local wireless receiver is not being used to receive a signal from a remote transmitter.

14. The method of claim 1 wherein tuning the active cancellation circuit comprises making adjustments to an active cancellation control signal, the method further comprising:

detecting when at least one local wireless transmitter is transmitting and the local wireless receiver is being used to receive a signal from a remote transmitter; and

providing the active cancellation control signal at a particular level.

15. The method of claim 14 wherein the particular level of the active cancellation control signal comprises a most recently tuned level.

16. The method of claim 14 wherein providing the active cancellation control signal at the particular level comprises:

identifying a center frequency of the local wireless receiver; and

retrieving the particular level of the active cancellation signal from a memory location corresponding to the center frequency of the local wireless receiver.

17. The method of claim 16 wherein providing the active cancellation control signal at the particular level further comprises:

identifying additional center frequencies of the local wireless receiver as the local wireless receiver frequency hops; and

retrieving additional particular levels of the active cancellation control signal from additional memory locations corresponding respective ones of the additional center frequencies.

18. The method of claim 1 wherein tuning the active cancellation circuit comprises:

making adjustments to an active cancellation control signal; and

populating a memory with particular levels of the active cancellation control signal corresponding to a plurality of center frequencies of the local wireless receiver as the local wireless transmitter frequency hops among the plurality of center frequencies.

19. The method of claim 1 wherein the active cancellation circuit comprises a first variable gain bi-phase attenuator, a second variable gain bi-phase attenuator, and a summer to combine outputs from the first and the second variable gain bi-phase attenuators to produce the cancellation signal, and wherein tuning the active cancellation circuit comprises:

adjusting a gain on a model of a signal from the local wireless transmitter through the first variable gain bi-phase attenuator;

adjusting a gain on a quadrature of the model of the signal from the local wireless transmitter through the second variable gain bi-phase attenuator.

20. The method of claim 1 wherein the local wireless transmitter and the local wireless receiver comprise a full duplex communications device.

21. The method of claim 1 wherein the local wireless transmitter and the local wireless receiver comprise a first local wireless radio, and wherein the active cancellation circuit, when tuned, is to reduce an additional coupled signal from a second local wireless radio.

22. The method of claim 21 wherein the first local wireless radio and the second local wireless radio comprise two full duplex radios, two half duplex radios, or a combination of a full duplex radio and a half duplex radio.

23. The method of claim 1 wherein the signal strength indicator indicates the power level also from a plurality of additional local wireless transmitters.

24. A machine readable medium having stored thereon machine executable instructions to implement a method comprising:

receiving a signal strength indicator that indicates a power level of a coupled signal from a local wireless transmitter at a local wireless receiver; and

tuning an active cancellation circuit to reduce the signal strength indicator, said active cancellation circuit to generate a cancellation signal to combine with the coupled signal at the local wireless receiver.

25. An apparatus comprising:

a state machine to receive a signal strength indicator that indicates a power level of a coupled signal from a local wireless transmitter at a local wireless receiver, and

tune an active cancellation circuit to reduce the signal strength indicator, said active cancellation circuit to generate a cancellation signal to combine with the coupled signal at the local wireless receiver.